CLAIMS

What is claimed is:

1   1.   A method comprising the steps of:

2   a)   serially providing a command sequence containing a first

3   channel identifier to a first device of a plurality of daisy chained devices; and

4   b)   modifying the first channel identifier to generate a second

5   channel identifier for transmission to the next device in the daisy chain.

1   2.   The method of claim 1 wherein the command sequence includes a

2   command word, an address word, and at least one data word.

1   3.   The method of claim 1 further comprising the step of:

2   c)   executing a command of the command sequence on any device

3   receiving the command, if that device has a received channel identifier

4   matching a pre-determined value, wherein each of the plurality of devices

5   uses the same pre-determined value for comparison.

1   4.   The method of claim 3 wherein the pre-determined value is a selected

2   member of the set {x0h, xFh}.

1   5.   The method of claim 1 wherein step b) further comprises the step of

2   incrementing the first channel identifier to form the second channel

3   identifier.

1   6.   The method of claim 1 wherein step b) further comprises the step of

2   decrementing the first channel identifier to form the second channel

3   identifier.

1   7.   The method of claim 1 wherein the first channel identifier is provided

2   in least significant bit order within the command sequence.

1   8.   The method of claim 1 further comprising the step of:

2   c)   executing a command of the command sequence received by

3   each device on that device independently of its associated received channel

4   identifier, if a broadcast option is selected.

1   9.   A serial device apparatus comprising:

2   a serial input port for receiving a first command sequence having a

3   first channel identifier and a remaining command sequence;

4   a daisy chain output port; and

5   command sequence processing logic for modifying the first channel

6   identifier to form a second channel identifier, wherein the command

7   processing logic provides the second channel identifier and the remaining

8   command sequence to the daisy chain output port.

1   10.   The apparatus of claim 9 wherein the first channel identifier is

2   incremented to form the second channel identifier.

1   11.   The apparatus of claim 9 wherein the first channel identifier is

2   decremented to form the second channel identifier.

1   12.   The apparatus of claim 9 wherein the first channel identifier is stored

2   in least significant bit order within the command sequence.

1   13.   The apparatus of claim 9 further comprising:

2   command execution logic for executing the command if the first

3   channel identifier matches a pre-determined value.

1   14.   The apparatus of claim 13 wherein the pre-determined value is a

2   selected member of the set {x0h, xFh}.

1   15.   An apparatus comprising:

2   a bus master providing an initial command sequence having an initial

3   channel identifier;

4   a plurality of serial devices, each device comprising:

5   a serial input port for receiving a first command sequence

6   having a first channel identifier and a remaining command sequence;

7   a daisy chain output port; and

8   command sequence processing logic for modifying the first

9   channel identifier to form a second channel identifier, wherein the command

10   processing logic provides the second channel identifier and the remaining

11   command sequence to the daisy chain output port;

12   a bus coupling the serial devices in one of a normal configuration and

13   a daisy chain configuration.

1   16.   The apparatus of claim 15 wherein the bus master provides the initial

2   command sequence with the channel identifier selected from the set of {x0h,

3   xFh} when the devices are coupled in the normal configuration, wherein

4   each of the plurality of devices receives the initial command sequence

5   substantially simultaneously.

1   17.   The apparatus of claim 15 wherein when coupled in daisy chain

2   configuration, the bus master provides the initial command sequence to a

3   first serial device of the plurality of devices, wherein each subsequent device

4   receives a modified command sequence including the second channel

5   identifier and the remaining command sequence provided by a preceding

6   serial device, wherein the plurality of second channel identifiers is distinct.

1   18.   The apparatus of claim 15 wherein each serial device further comprises

2   command execution logic, wherein the command execution logic executes

3   the command sequence received by that device if the associated channel

4   identifier matches a pre-determined value shared by the plurality of serial

5   devices.

1   19.   The apparatus of claim 18 wherein the pre-determined value is a

2   selected member of the set {x0h, xFh}.

1   20.   The apparatus of claim 15 wherein the bus master provides the initial

2   channel identifier in least significant bit order within the initial command

3   sequence, wherein the initial command sequence is provided in most

4   significant bit order.